

REMARKS

Claims 2-18 are pending herein. By this Amendment, the specification has been amended; claim 1 has been canceled; and claims 2, 4, 5, 6, 7, 10, 15, 16 and 18 have been amended.

The specification and claims 4-6 have been amended to replace the term “baffleplate” with the term --baffle plate--.

Claim 1 has been canceled and its contents incorporated into claim 2, which is now an independent claim.

Claim 2 has been further amended to recite that the inner cylinder is centrally disposed in the processing tank and that the cylindrical straightening vane is disposed between a cylindrical wall of the processing liquid tank and the inner cylinder. Support for these recitations can be found, e.g., in the specification at Figure 4.

Claims 10, 15, 16 and 18 have been amended to depend upon claim 2 rather than upon canceled claim 1.

In the Office Action, the disclosure is objected to; claims 4-6 are objected to; claims 16 and 17 are objected to; claims 1, 10, 14, 16 and 17 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 6,427,638 to Kolbusz et al. (“Kolbusz”); and claims 2-9, 11-13, 15 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kolbusz.

In view of the amendments and remarks herein, Applicant respectfully requests reconsideration and withdrawal of the objections and rejections set forth in the Office Action.

I. Objection to the Disclosure

The disclosure is objected to because the terms “baffleplate” and “baffle plate” are used intermittently throughout the specification. The specification has been amended to change “baffleplate” to --baffle plate--. Accordingly, Applicant respectfully requests that this objection be withdrawn.

II. Objection to Claims 4-6

Claims 4-6 are objected to because the terms “baffleplate” and “baffle plate” are used interchangeably in the claims. Claims 4-6 have been amended to change “baffleplate” to --baffle plate--. Accordingly, Applicant respectfully requests that this objection be withdrawn.

III. Objection to Claims 16 and 17

Claims 16 and 17 are objected to because grammar informalities are said to make the claim language unclear. For example, claim 16 recites “wherein the inner cylinder has the bottom closed capably of storing a liquid inside”. The Examiner states that this language is unclear and asks whether it should read “wherein the inner cylinder has the bottom closure capable of storing a liquid inside”. Claim 17 is objected to because it depends upon claim 16.

Claim 16 has been amended in accordance with the Examiner’s suggestion. Accordingly, Applicant respectfully requests that this objection be withdrawn.

IV. Rejection Under 35 U.S.C. 102(b)

Claims 1, 10, 14, 16 and 17 are rejected under §102(b) as being anticipated by Kolbusz. Figures 1-4 of Kolbusz are said to show the processing liquid tank recited in these claims.

Claim 1 has been canceled and its contents incorporated into claim 2, which is now independent. Claims 10, 14, 16 and 17 have been amended so that they now depend upon claim 2. Claim 2 has been further amended to recite that the inner cylinder is centrally disposed in the processing tank and that the cylindrical straightening vane is disposed between a cylindrical wall of the processing liquid tank and the inner cylinder.

Kolbusz does not teach or suggest an inner cylinder centrally disposed in the processing tank and a cylindrical straightening vane which is disposed between a cylindrical wall of the processing liquid tank and a centrally disposed inner cylinder. Therefore, for at least these reasons, Applicant respectfully submits that Kolbusz does not anticipate instant claims 2, 10, 14, 16 and 17.

V. Rejection Under 35 U.S.C. 103(a)

Claims 2-9, 11-13, 15 and 18 are rejected under §103(a) as being unpatentable over Kolbusz.

According to the Examiner, Kolbusz's disclosure of chamber-interconnecting duct 23 reads on claim 2's straightening vane. Although Kolbusz does not explicitly teach that duct 23 is cylindrical, the Examiner states that a cylindrical shape would have been obvious because it achieves the same functions for providing liquid flow therein. Applicant respectfully submits that the cylindrical straightening vane recited in amended claim 2 is different from the chamber-interconnecting duct 23 disclosed in Kolbusz.

As stated above, claim 2 has been amended to recite that the cylindrical straightening vane is disposed between a cylindrical wall of the processing liquid tank and a centrally disposed inner cylinder. This configuration can be seen, e.g., in Figure 4 of the instant specification, which shows cylindrical straightening vane 140 disposed between cylindrical wall 100a of chemical liquid tank 100 and inner cylinder 130. As a result, cylindrical straightening vane 140 separates region S5 from region S6.

As can be seen in Figure 4 of the instant specification, region S5 is disposed outer of the cylindrical straightening vane 140, and region S6 is disposed inner of the straightening vane 140 (see also page 12, lines 2-8). The position of the cylindrical straightening vane relative to the wall of the tank and the centrally disposed inner cylinder is an important feature of the present invention. For example, the instant specification teaches that:

On the other hand, the chemical liquid discharged from the inner chamber 6 to be recovered is led into the chemical liquid tank 100 through the chemical liquid recovery line (inlet pipe) 115 and into the upper region S4 upper of the baffle plate 150, bypasses the baffle plate 150, passing through the gap G1 and *flows into the region S5 between the cylindrical wall 100a and the straightening vane 140. In the region S5, the chemical liquid descends in the region S5 along the outside of the straightening vane 140*, passing around the 3 pipes 160a, 160b, 160c vertically arranged. Meanwhile the chemical liquid is heated by the heat medium by the heat conducted via the pipes 160a, 160b, 160c and has the temperature gradually increased. *At the lower part in the region S5, the chemical liquid bypasses the lower end of the straightening vane 140, passes through the gap G2 to flow into the region S6 between the inner cylinder 130 and the straightening vane 140. In the region S6, the chemical liquid passes through the gaps defined between the respective 3 pipes*

160, 160b, 160c, which are arranged side by side to ascend in the region S6 along the inside of the straightening vane 140 toward the underside of the baffle plate 150. Meanwhile the chemical liquid is heated by the heat of the heat medium conducted via the pipes 160a, 160b, 160c to have the temperature gradually increased. *At an upper part in the region S6, the chemical liquid which has been heat exchanged is led out at below the baffle plate 150 through the chemical liquid supply line (outlet pipe) 105.* As described above, in the chemical liquid tank 100, the baffleplate 150, the straightening vane 140, the chemical liquid supply line (outlet pipe) 105 lead a chemical liquid *to form a flow passage of the chemical liquid, in which the chemical liquid flows sequentially in the region S4, the region S5 and the region S6.* (page 17, line 18 – page 18, line 10) [emphasis added].

As described above, a chemical liquid follows the flow passage in which the chemical liquid is introduced into the region S4, descends in the region S5, and then ascends in the region S6. In contrast to this, as described above, a heat medium follows the flow passage in which the heat medium descends through the respective pipes 160a, 160b, 160c in the region S6, ascends through the respective pipes 160a, 160b, 160c in the region S5. *In other words, the heat medium and the chemical liquid oppositely flow.* (page 18, lines 11-18).

The heated heat medium is deprived of the heat by the chemical liquid while descending in the region S6 and ascending in the region S5; the temperature is higher more upstream and goes on decrease toward the downstream. *The chemical liquid, which follows the flow passage opposite to the heat medium,* is heated by the heat medium of a lower temperature at the upstream and heated toward the downstream by the heat medium of higher temperatures. (page 18, lines 19-26).

Thus, the position of the cylindrical straightening vane relative to the wall of the tank and the centrally disposed inner cylinder is important to the heat medium and the chemical liquid being able to flow oppositely to one another, which is a beneficial arrangement. According to the specification:

It is preferable that the flow of the heat medium passing through the pipe and the flow of the processing liquid are opposite to each

other. The heat of the heat medium can be efficiently conducted to the processing liquid. (page 3, lines 5-8).

As can be seen in Figure 3 in Kolbusz, the chamber-interconnection duct 23 is not disposed between a cylindrical wall of a processing liquid tank and a centrally disposed inner cylinder. Thus, the position of the chamber-interconnection duct in the tank disclosed in Kolbusz is different from the position of the cylindrical straightening vane in Applicant's claimed tank. Kolbusz does not teach or suggest a centrally disposed inner cylinder or the positioning of the chamber-interconnection duct between such inner cylinder and a cylindrical wall of a processing liquid tank.

Therefore, for at least this reason, Applicant submits that claims 2-9, 11-13, 15 and 18 would not have been obvious over Kolbusz.

VI. Conclusion

In view of the amendments and rejections herein, Applicant respectfully requests that the objections and rejection be withdrawn and that claims 2-18 be allowed.

If any additional fees are due in connection with the filing of this paper, such as fees under 37 C.F.R. §§1.16 or 1.17, please charge the fees to Deposit Account 02-4300; Order No. 033082M170.

Respectfully submitted,
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Dated: September 18, 2006

MAM/MM/cvj
Enclosures: (1) Petition for Extension of Time
(2) Check for the sum of \$120